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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 09/066,513 | 04/24/98 | REYNOLDS | K 21669USA |
| | | IM62/0914 | EXAMINER |
| | | | NOLAN, S |
| | | | ART UNIT |
| | | | PAPER NUMBER |
| | | 1772 | 3 |
| | | DATE MAILED: | 09/14/99 |

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

| | | |
|------------------------------|-----------------|----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/066513 | REYNOLDS ET AL |
| | Examiner | Group Art Unit |
| | NOLAN | 1772 |

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Priority for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

Responsive to communication(s) filed on _____.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

Claim(s) 1-23 is/are pending in the application.

Of the above claim(s) 18-23 is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1-17 is/are rejected.

Claim(s) _____ is/are objected to.

Claim(s) 1-23 are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The proposed drawing correction, filed on _____ is approved disapproved.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Attachment(s)

Information Disclosure Statement(s), PTO-1449, Paper No(s). 2 Interview Summary, PTO-413

Notice of References Cited, PTO-892 Notice of Informal Patent Application, PTO-152

Notice of Draftsperson's Patent Drawing Review, PTO-948 Other _____

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement submitted on May 21, 1999 (Paper No. 2) has been considered. A copy of the form PTO 1449 is enclosed.

Restriction Requirement

2. Restriction has been required under 35 USC 121 between the following groups of claims:

- I. claims 1-17, drawn to a tubular article, classified in class 428, subclass 36.91; and
- II. claims 18-23, reciting methods of molding, classified in class 264, subclass 126.

3. The inventions as grouped above are related as a product (Group I) and a process for making that product (Group II). Restriction is proper in this type of situation if either:

- (a) the product of Group I can be made using a process that is separate and distinct from that of Group II; or

- (b) the process can be used to make a materially different product, other than that of Group I. In this case, (a) the product of Group I could be made by sequential extrusion or filament winding techniques and (b) the process of Group II could be used to make other ~~articles~~ ^{articles} ~~eg. polyester sheet laminates.~~ ^{eg.}

4. Since these inventions are recognized as distinct by virtue of their different classifications and fields of such, restriction for examination purposes is proper.

5. On August 26, 1999, Examiner Nolan telephoned Joshua Slavitt (215/923-4466), who provisionally elected the Group I invention (claims 1-17) with traverse.

6. To be complete, Applicant's response must confirm this election, even if the requirement is traversed (37 CFR 1.143).

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7. Upon cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer appropriate for at least one remaining claim. See 37 CFR 1.48(b) and 37 CFR 1.17(I).

Summary of Claims

8. Claims 1-23 are pending. The elected claims, 1-17, can be summarized as follows:

Claim 1 covers an abrasion resistant tubular article comprising an inner wall of polytetrafluoroethylene (PTFE) and an outer wall of a composition containing PTFE and a filler. Claims 2 and 3 depend on claim 1 and specify amounts of PTFE and filler in the outer wall. Claim 4 depends on claim 1 and calls for an organic filler in the inner wall's composition. Claims 5 and 6 depend on claim 4 and specify amounts of PTFE and filler in the inner wall. Claim 7 depends on claim 1 and recites a Markush group of inorganic fillers. Claim 8 depends on claim 4 and recites a Markush group of organic fillers. Claim 9 depends on claim 1 and states that the inner wall is 5 to 50% of the article's thickness. Claim 10 depends on claim 1 and states that the inner wall is 10 to 25% of the article's thickness. Claim 11 depends on claim 4 and recites an intermediate layer of PTFE between the walls.

Claim 12 is independent and covers a tubular article having inner and outer walls with the filler and PTFE contents of both recited.

Claims 13 depends on claim 12 and recites a Markush group of inorganic fillers for use in the outer wall. Claim 14 depends on claim 12 and recites a Markush group of organic fillers for use in the inner wall. Claim 15 depends on claim 12 and says that the inner wall is 5 to 50% of the article's thickness. Claim 16 depends on claim 12 and states that the inner wall is 10 to 25%

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of the article's thickness. Claim 17 depends on claim 12 and calls for the use of an intermediate layer of PTFE.

9. Claims 18-23 are non-elected.

35 USC 103 Rejections

10. Claims 1-3, 7 and 9-11 are rejected under 35 USC 103(a) as unpatentable over Sasaki et al (U.S. 5,789,047) in view of Giatros et al (U.S. 4,362,069) and Doose (U.S. 4,580,790).

Sasaki et al show tubes (claim 1) made of composites containing PTFE in three layers (claim 4) and having inner layers that are 1/1000 to ½ of the overall tube thickness (claim 1). Sasaki et al do not show fillers.

Giatras et al disclose tubes (col. 4, lines 16+) containing glass heads/fibers (col. 9, lines 6+) as fillers to enhance the functional efficiencies (col. 5, lines 26+) of PTFE moldings. Giatras et al don't show PTFE intermediate layers or the claimed thicknesses.

Doose deals with glass or mineral particles in PTFE compositions to generate low amounts of wear debris (abstract). Doose does not show organic fillers or tubes.

It would have been obvious to one of ordinary skill in the art at the time that the invention was made, to employ suitable amounts of the wear-reducing fillers of Giatras et al and Doose to enhance the anti-frictional properties of the outer layers of Sasaki et al's tubes.

9. Claims 4-6, 8 and 12-17 are rejected under 35 USC 103(a) as unpatentable over Sasaki et al with Giatras and Doose, as applied to claims 1-3, 7 and 9-11 above, and further in view of Fukuda et al (US. 5,161,427).

Sasaki et al, Giatras et al and Doose are discussed above.

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Fukuda et al show the use of polyamide-imides (abstract) as anti-wear organic fillers in PTFE liners for conducts (ie., tubes) (col. 2, line 25). Abrasion resistance is enhanced (col. 2, lines 61+). They do not teach inorganic fillers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ suitable amounts of the organic filler of Fukuda et al, for added anti-wear properties, in the PTFE/inorganic filler composites suggested by the combination of Sasaki et al with Giatras et al and Doose, above.

Conclusion

For inquiries concerning this communication, contact the examiner, Sandra Nolan, at 703/308-9545. She can be reached between 7:30 am and 4:00 pm, Monday through Thursday. She is also available on alternate Fridays.

If you cannot reach the examiner, her supervisor, Ellis P. Robinson, can be reached at 703/308-2364. The telephone number for the group receptionist is 703/308-0661. The fax number for this Art Unit is 703/305-5408.

Ellis P. Robinson
Ellis Robinson
Supervisory Patent Examiner
Technology Center 1700

S. M. Nolan/mm

September 14, 1999